WHAT IS CLAIMED IS

1.   An encryption/decryption device for a wireless local area network, electrically connected to a host with a second encryption/decryption table including a station identifier field, an encryption/decryption algorithm identifier field and a key field for encrypting/decrypting frames, the encryption/decryption device comprising:

a data receiving unit for receiving frames;

a data transmitting unit for transmitting frames;

a hardware encryption/decryption unit with a first encryption/decryption table, wherein the hardware encryption/decryption unit is an electrical circuit fabricated according to at least one encryption/decryption algorithm and the first encryption/decryption table comprises a station identifier field, an encryption/decryption algorithm identifier field and a key field for encrypting/decrypting frames;

a first checking unit electrically connected to the data receiving unit and the hardware encryption/decryption unit, wherein the first checking unit chooses to use either the host or the hardware encryption/decryption unit to decrypt an encrypted frame received by the data receiving unit; and

a second checking unit electrically connected to the hardware encryption/decryption unit and the host, wherein the second checking unit checks whether the hardware encryption/decryption unit has to encrypt a frame that is to be encrypted or the frame has been encrypted by the host.

2.   The encryption/decryption device for a wireless local area network of Claim 1, wherein the host is a station or a personal computer.

3.   The encryption/decryption device for a wireless local area network of Claim 1, wherein the second encryption/decryption table can be updated by a program.

4.   An encryption/decryption device for a wireless local area network, electrically connected to a host with a second encryption/decryption table, the second encryption/decryption table comprising a station identifier field, an encryption/decryption algorithm identifier field and a key field for encrypting/decrypting frames, the encryption/decryption device comprising:

a data receiving unit for receiving frames;

a data transmitting unit for transmitting frames;

a hardware encryption/decryption unit with a first encryption/decryption table, wherein the hardware encryption/decryption unit is an electrical circuit fabricated according to one encryption/decryption algorithm and the first encryption/decryption table comprises a station identifier field and a key field for encrypting/decrypting frames;

a first checking unit electrically connected to the data receiving unit and the hardware encryption/decryption unit, wherein the first checking unit chooses to use either the host or the hardware encryption/decryption unit to decrypt an encrypted frame received by the data receiving unit; and

a second checking unit electrically connected to the hardware encryption/decryption unit and the host, wherein the second checking unit checks whether the hardware encryption/decryption unit has to encrypt a frame that is to be encrypted or the frame has been encrypted by the host.

5.   The encryption/decryption device for a wireless local area network of Claim 4, wherein the host is a station or a personal computer.

6.   The encryption/decryption device for a wireless local area network of Claim 4, wherein the second encryption/decryption table can be updated by a program.

7.   An encryption/decryption device for a wireless local area

network, comprising:

a data receiving unit for receiving frames;

a data transmitting unit for transmitting frames;

a hardware encryption/decryption unit with a first encryption/decryption table, wherein the hardware encryption/decryption unit is an electrical circuit fabricated according to at least one encryption/decryption algorithm and the first encryption/decryption table comprises a station identifier field, an encryption/decryption algorithm identifier field and a key field for encrypting/decrypting frames;

a programmable encryption/decryption unit with a second encryption/decryption table, wherein the second encryption/decryption table comprises a station identifier field, an encryption/decryption algorithm identifier field and a key field for encrypting/decrypting frames;

a first checking unit electrically connected to the data receiving unit and the hardware encryption/decryption unit, wherein the first checking unit chooses to use either the programmable encryption/decryption unit or the hardware encryption/decryption unit to decrypt an encrypted frame received by the data receiving unit; and

a second checking unit electrically connected to the programmable encryption/decryption unit and the hardware encryption/decryption unit, wherein the second checking unit checks whether the hardware encryption/decryption unit has to encrypt a frame that is to be encrypted or the frame has been encrypted by the programmable encryption/decryption unit.

8.   The encryption/decryption device for a wireless local area network of Claim 7, wherein the programmable encryption/decryption unit is consisted of a programmable logic element or an embedded system.

9.   The encryption/decryption device for a wireless local area

network of Claim 7, wherein the second encryption/decryption table can be updated by a program.

10. An encryption/decryption device for a wireless local area network, comprising:

5   a data receiving unit for receiving frames;

a data transmitting unit for transmitting frames;

a hardware encryption/decryption unit with a first encryption/decryption table, wherein the hardware encryption/decryption unit is an electrical circuit fabricated according to one

10   encryption/decryption algorithm and the first encryption/decryption table comprises a station identifier field and a key field for encrypting/decrypting frames;

a programmable encryption/decryption unit with a second encryption/decryption table, wherein the second encryption/decryption

15   table comprises a station identifier field, an encryption/decryption algorithm identifier field and a key field for encrypting/decrypting frames;

a first checking unit electrically connected to the data receiving unit and the hardware encryption/decryption unit, wherein the first checking unit chooses to use either the programmable encryption/decryption unit or

20   the hardware encryption/decryption unit to decrypt an encrypted frame received by the data receiving unit; and

a second checking unit electrically connected to the hardware encryption/decryption unit and the programmable encryption/decryption unit, wherein the second checking unit checks whether the hardware

25   encryption/decryption unit has to encrypt a frame that is to be encrypted or the frame has been encrypted by the programmable encryption/decryption unit.

11. The encryption/decryption device for a wireless local area

network of Claim 10, wherein the programmable encryption/decryption unit is consisted of a programmable logic element or an embedded system.

12.   The encryption/decryption device for a wireless local area network of Claim 10, wherein the second encryption/decryption table can be updated by a program.

13.   A decryption method for a wireless local area network, comprising the steps of:

checking whether a received frame is a ciphertext or a plaintext;

checking whether a hardware decryption unit can decrypt if the frame is a ciphertext; and

decrypting the frame by the hardware decryption unit if the hardware decryption unit can decrypt the frame, otherwise decrypting the frame by a programmable decryption unit.

14.   The decryption method for a wireless local area network of Claim 13, wherein the programmable decryption unit is a station, a personal computer, a programmable logic element or an embedded system.

15.   The decryption method for a wireless local area network of Claim 13, wherein the hardware decryption unit comprises a first decryption table, the programmable decryption unit comprises a second decryption table, and the first and the second decryption tables comprise at least a station identifier field and a key field for decrypting frames.

16.   The decryption method for a wireless local area network of Claim 13, wherein the second decryption table can be updated by a program.

17.   An encryption method for a wireless local area network, comprising the steps of:

checking whether to encrypt a frame before transmission;

checking whether a hardware encryption unit can encrypt the frame if necessary; and

encrypting the frame by the hardware encryption unit if the hardware encryption unit can encrypt the frame, otherwise encrypting the frame by a programmable decryption unit.

18. The encryption method for a wireless local area network of Claim 17, wherein the programmable encryption unit is a station, a personal computer, a programmable logic element or an embedded system.

19. The encryption method for a wireless local area network of Claim 17, wherein the hardware encryption unit comprises a first encryption table, the programmable encryption unit comprises a second encryption table, and the first and the second encryption tables comprise at least a station identifier field and a key field for encrypting frames.

20. The encryption method for a wireless local area network of Claim 17, wherein the second encryption table can be updated by a program.